



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : C07K 14/415, C12N 15/29 // 15/82	A2	(11) International Publication Number: WO 97/29123 (43) International Publication Date: 14 August 1997 (14.08.97)
(21) International Application Number: PCT/GB97/00390 (22) International Filing Date: 12 February 1997 (12.02.97) (30) Priority Data: 9602796.6 12 February 1996 (12.02.96) GB (71) Applicant (for all designated States except US): JOHN INNES CENTRE INNOVATIONS LIMITED [GB/GB]; Norwich Research Park, Colney Lane, Norwich NR4 7UH (GB). (72) Inventors; and (75) Inventors/Applicants (for US only): HARBERD, Nicholas, Paul [GB/GB]; John Innes Centre, Dept. of Molecular Genetics, Colney Lane, Norwich NR4 7UJ (GB). PENG, Jinrong [CN/GB]; John Innes Centre, Dept. of Molecu- lar Genetics, Norwich Research Park, Colney Lane, Nor- wich NR4 7UJ (GB). CAROL, Pierre [FR/FR]; Université Joseph Fourier, Génétique Moléculaire Végétale, B53X, F- 38041 Grenoble Cédex (FR). RICHARDS, Donald, Ernest [GB/GB]; John Innes Centre, Dept. of Molecular Genetics, Norwich Research Park, Colney Lane, Norwich NR4 7UJ (GB). 74) Agents: WALTON, Sean, M. et al.; Mewburn Ellis, York House, 23 Kingsway, London WC2B 6HP (GB).	(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published Without international search report and to be republished upon receipt of that report.	

54) Title: NUCLEIC ACID ENCODING GAI GENE OF ARABIDOPSIS THALIANA

57) Abstract

The *GAI* gene of *Arabidopsis thaliana* has been cloned, along with mutant and homologue gene sequences. Expression of such genes in plants affects characteristics of the plants including growth. *GAI* expression inhibits growth of plants, which inhibition is antagonised by gibberellin (GA). Expression of *gai* mutants confers a dwarf phenotype which is GA-insensitive. Manipulation of expression of *GAI* and *gai* genes in plants results in tall or dwarfed plants. Dwarf plants are useful in particular for reduction in crop losses resulting from lodging.